AMENDMENTS

Please amend the claims as follows:

1-15. (cancelled)

16. (currently amended) A method for adaptive ultrasound imaging, the method comprising:

(a) obtaining data from a plurality of transducer elements;

(b) determining a coherence factor as a function of the data; and

(c) setting an image forming parameter as a function of the coherence factor, the image forming parameter being for processing beamsummed data with synthesis, multibeam, a number of sequential beams, a number of sub-apertures, a number of focal zones, or combinations thereof.

17. (previously presented) The method of Claim 16 wherein (c) comprises setting a parameter for synthesis.

18. (original) The method of Claim 16 wherein (b) comprises calculating a ratio of coherent sum to an incoherent sum.

19. (original) The method of Claim 16 wherein (b) comprises calculating phase variance across transducer elements.

20. (previously presented) The method of Claim 16 wherein (b) comprises calculating the coherence factor as a function of the data altered by beamforming delays prior to summing the data for beamforming.

21. (original) The method of Claim 16 wherein (c) comprises setting a number of simultaneous beams.

22. (original) The method of Claim 16 wherein (c) comprises setting a number of sequential beams.

23. (original) The method of Claim 16 wherein (c) comprises setting one of: a number of sub-apertures, a number of focal zones in a same scan line and combinations thereof.

24. (original) The method of Claim 16 wherein (c) comprises setting a number of beams compounded together.

25. (original) The method of Claim 16 wherein (c) comprises setting one of: transmit multibeam parameters, receive multibeam parameters and combinations thereof.

26. (original) The method of Claim 16 wherein (c) comprises setting a number of receive sub-apertures;

further comprising:

(d) coherently summing ultrasound data within each of the sub-apertures; and

(e) incoherently summing coherent sum outputs of at least two sub-apertures of (d).

27. (currently amended) A system for adaptive ultrasound imaging, the system comprising:

a transducer having a plurality of elements;

a coherence factor processor operable to determine a coherence factor as a function of ultrasound data from the elements; and

an image forming processor operable to form images as a function of the coherence factor;

wherein the image forming processor is operable to set one of: a number of simultaneous beams, a number of sequential beams, a number of sub-apertures, a number of focal zones in a same scan line, a number of beams compounded together, transmit multibeam parameters, receive multibeam parameters and combinations thereof for processing beamsummed data.

28. (original) The system of Claim 27 wherein the image forming processor comprises a compound processor.

29. (cancelled)

30. (currently amended) A method for adaptive ultrasound imaging, the method comprising:

(a) obtaining ultrasound data from a plurality of transducer elements;

(b) determining a coherence factor as a function of the ultrasound data;

displaying with a dynamic range, filtering with a nonlinear filter, and map with a nonlinear map; and

(c) ~~setting a~~ adaptively selecting the dynamic range used in the displaying, selecting the [[a]] nonlinear filter used in the filtering, selecting the [[a]] nonlinear map used in the mapping, or combinations thereof as a function of the coherence factor.

31. (original) The method of Claim 30 wherein (c) comprises setting the dynamic range as a function of the coherence factor.

32. (original) The method of Claim 30 wherein (c) comprises setting the nonlinear filter as a function of the coherence factor.

33. (original) The method of Claim 30 wherein (c) comprises setting the nonlinear map as a function of the coherence factor.

34. (previously presented) A system for adaptive ultrasound imaging, the system comprising:

a transducer having a plurality of elements;

a coherence factor processor operable to determine a coherence factor as a function of ultrasound data from the elements; and

an image processor operable to [[set]] adaptively select a dynamic range, a nonlinear filter, a nonlinear map, or combinations thereof as a function of the coherence factor and then operable to use the selected dynamic range, use the selected nonlinear filter, use the selected nonlinear map, or combinations thereof, respectively.